

Trop2 dependent and independent mechanisms of self-renewal in human cancer stem cells

Grant Award Details

Trop2 dependent and independent mechanisms of self-renewal in human cancer stem cells

Grant Type: Basic Biology IV

Grant Number: RB4-06209

Project Objective: The stated objective of the Basic Biology project proposal is to define strategies for combinatorial targeting of Trop2-dependent and Trop2-independent mechanisms of self-renewal in human prostate epithelial CSCs to establish potential combinatorial therapies in advanced cancers.

Investigator:

Name:	Owen Witte
Institution:	University of California, Los Angeles
Type:	PI

Disease Focus: Cancer, Prostate Cancer, Solid Tumors

Human Stem Cell Use: Cancer Stem Cell

Award Value: \$1,254,960

Status: Closed

Progress Reports

Reporting Period: Year 1

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Reporting Period: Year 2

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Reporting Period: Year 3

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Grant Application Details

Application Title:	Trop2 dependent and independent mechanisms of self-renewal in human cancer stem cells
Public Abstract:	Progress from our group and others has led to the identification of normal prostate tissue stem cells and the definition of important signaling pathways that regulate their growth and maintenance. Human cancers utilize these same pathways to promote malignancy and drive tumor progression. Our recent studies have uncovered an important regulatory molecule (Trop2) that is expressed on a subset of prostate cancer cells capable of regenerating tumors. Trop2 expression is selected for in advanced disease and predicts poor prognosis for many tumors including prostate, ovarian, pancreatic, breast, gastric and colorectal cancer. We predict that blocking Trop2 and other regulatory signaling pathways will be an effective strategy to prevent disease progression in prostate and other human cancers.
Statement of Benefit to California:	In 2012 alone in the state of California, an estimated 29,000 men will be diagnosed with prostate cancer and almost 3,400 men will die from the disease. The advanced stages of prostate cancer are treated with hormonal therapy which causes significant changes in mood, body weight and composition, impotence and gynecomastia in addition to the pain and suffering from the disease. Our proposed experiments will define new therapeutic targets and combinatorial therapies with the potential to significantly extend life and minimize suffering of men with advanced prostate cancer. Many of the molecules that we are investigating are implicated in a range of tumors, suggesting that our findings may provide benefit to patients suffering from numerous cancers.

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